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Interaction of glycine with cations of Fe(III) and Ni(II) in water solutions and on surfaces of their oxides

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Abstract

Electrosurface properties (electrokinetic potential, isoelectric point, adsorption) of NiO and Fe_2O_3 oxides in water solutions of glycine depending on its concentration, pH of solutions, and time of adsorption have been investigated. It has been established that glycine in all systems is adsorbed specifically while anion is the factor determining the specific adsorption on Fe_2O_3, and cations – on NiO. It has been shown that specific adsorption of determining anion takes place with the formation of donor-acceptor bond on $-NH_2$ group, and determining cation on –COOH group. It has been discovered that glycine is adsorbed on NiO more intensively than on Fe_2O_3 due to stronger interaction of Fe cation with OH^- ions.